User manual

Guaiacol detection kit (Art.No. 2.04737.991)

1. Application

Enzyme assay for the detection of
Guaiacol-producing Alicyclobacillus ssp.
in the beverage and fruit compound industry.

The Guaiacol detection kit is a fast, reliable, sensitive and cost-efficient method for analysis of Guaiacol producing *Alicyclobacillus* even in complex products and is compliant to the IFU Method "Method on Detection of taint producing *Alicyclobacillus* in Fruit Juices" (IFU Method No.12.)
Just the detection of *Alicyclobacillus* in a product does not allow a clear prediction on the extent and /or risk of beverage spoilage. As the classical culturing methods (e.g. BAT Agar) only permit the identification of the entire group of *Alicyclobacillus* strains, the user needs to be able to distinguish the risk potential of the various *Alicyclobacillus* strains and clearly identify those with the greatest potential for beverage spoiling. Only those strains with a high beverage spoiling potential will produce the off-flavour Guaiacol during the incubation period. The colourless substance Guaiacol will turn to a brown coloured complex in an enzymatic test.

2. Handling

Required Material
Guaiacol detection kit
- **Incubation tubes with induction broth**
- **50ml buffer solution**
- **900µl hydrogen peroxide solution**
- **2ml Guaiacol standard solution**
- **Enzyme (dissolve with 900µl demineralised and sterilized water)**

Pipette
Pipette heads

Implementation
Inoculate positive *Alicyclobacillus* sample from BAT-Agar into incubation tube (Fig 1) with induction broth.

Prepare two extra incubation tubes without *Alicyclobacillus* sample for positive and negative sample (Fig 2).

Incubate the tubes for 24 hours at 45°C/113°F.

Add successive 1 ml buffer solution, 20µl hydrogen peroxide solution and 20µl enzymatic solution in all tubes including the positive and negative test. Change pipette heads after every single use in order to avoid secondary infection (Fig 3).

Wait for 10 minutes for final evaluation.

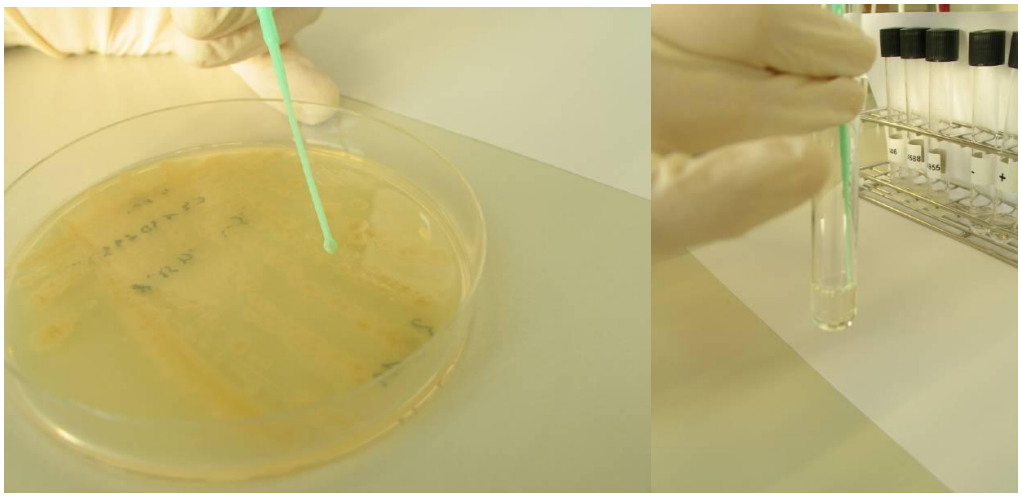

Fig. 1 Inoculation of the *Alicyclobacillus* sample

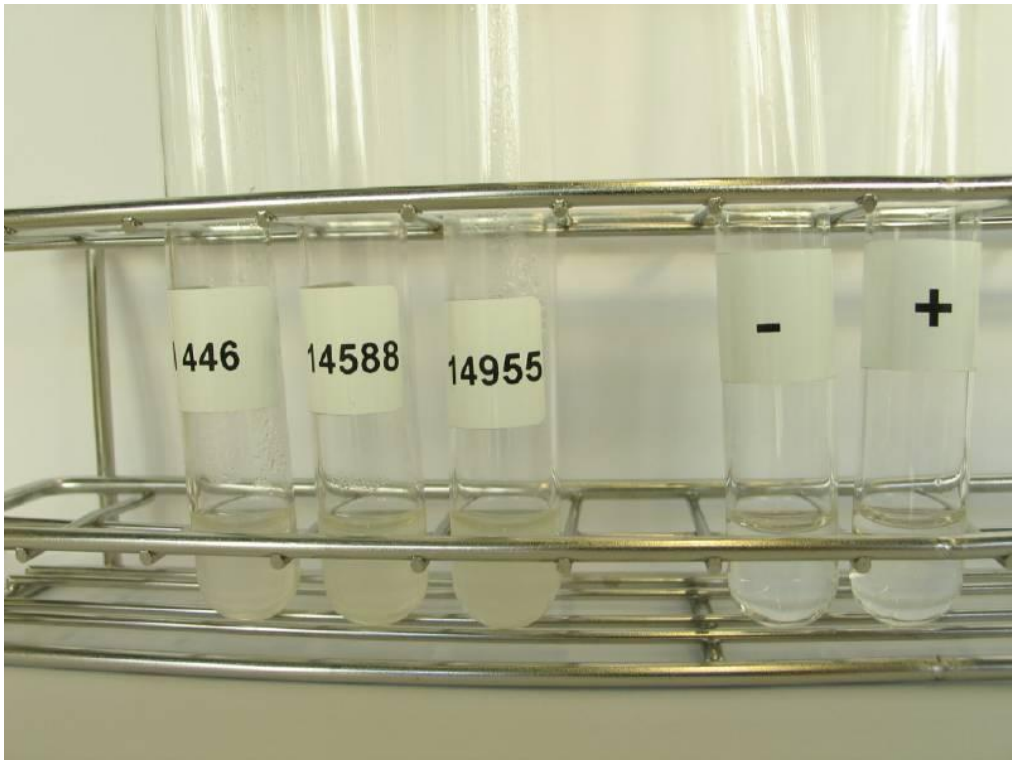

Fig. 2 Inoculated test tubes and positive/negative control tubes

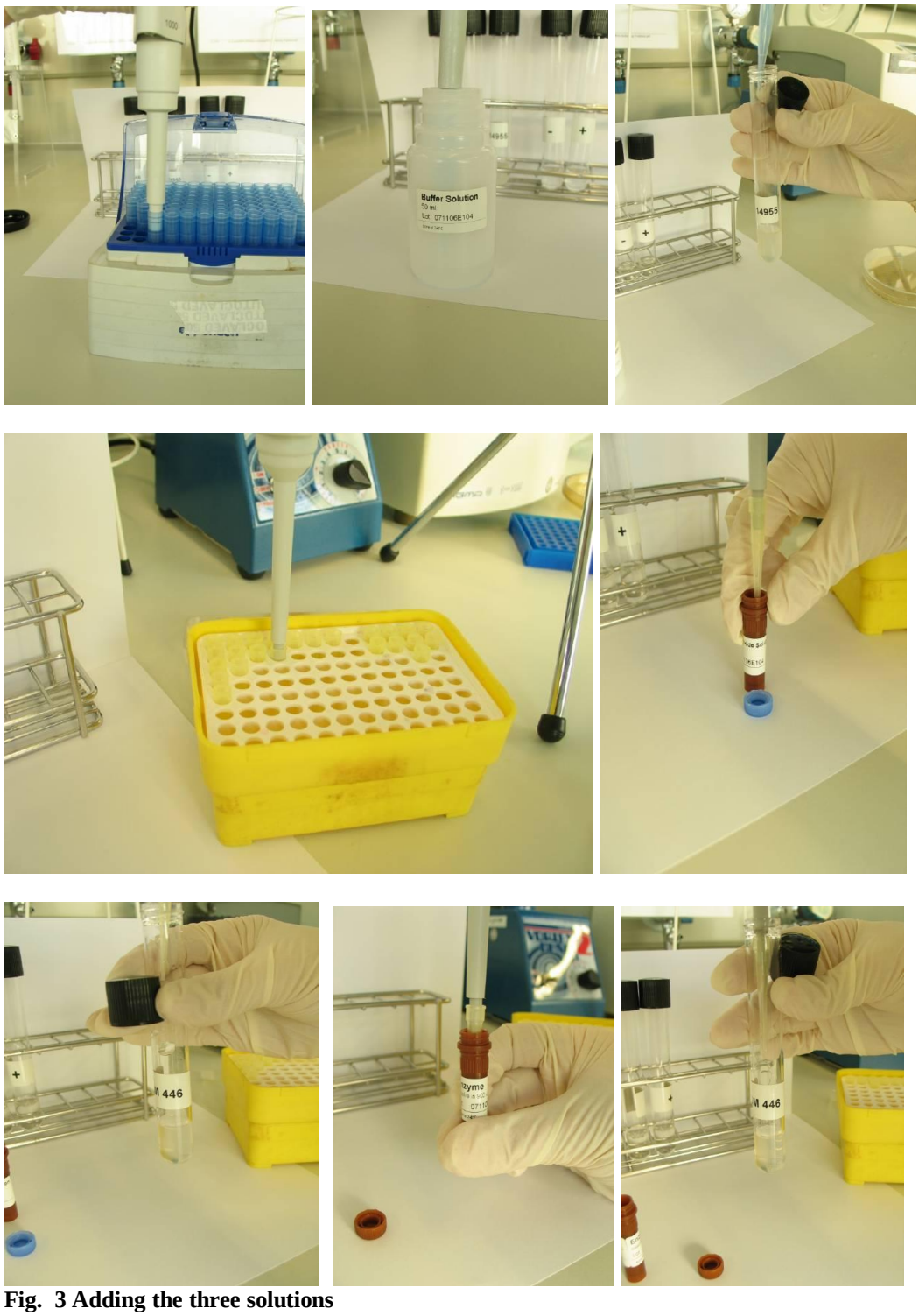

Fig. 3 Adding the three solutions

Evaluation

A simple visual evaluation is possible without any need for special technical equipment. The colourless guaiacol produced by the specific Alicyclobacillus strains will turn to a brown coloured complex due to the enzymatic reaction. Guaiacol negative samples will remain colourless.
Compare the inoculated samples with the positive and negative test. (Fig. 4)

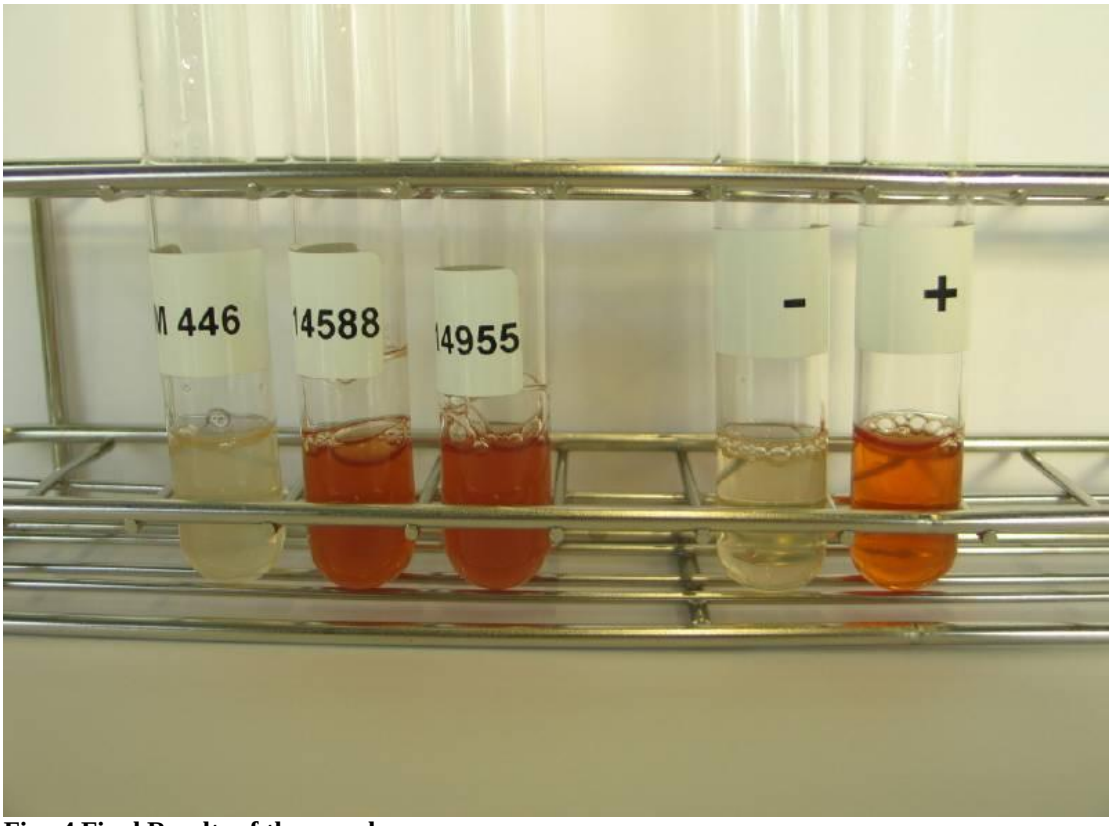

Fig. 4 Final Results of the samples

3. Storage and packaging Information

Packaging and Content

unit	box incl. 40 tubes with induction broth and 3 flasks with solutions
unit size	approx. 30cm x 25cm x 20cm / 12in x 10in x 8in
unit weight	approx. 1,5 kg / 3 lbs

Storage

Store at 4-8°C/40-45°F according to product specification.
Store under dry and dark conditions. Do not freeze product.

Waste Disposal

No dangerous good.
No hazardous material.
Please consider your local waste regulations.
Uninoculated media can be disposed of with normal laboratory waste.
Inoculated and incubated samples are to be sterilized before disposal at a temperature of 250°F / 121°C and a holding time of 20 minutes.

Warnings

Keep away from sources of ignition.

SISTEMAS AVANZADOS DE ANÁLISIS, S.L.
CIF: B-47700026
C/. Cardenal Torquemada, 24
Tel. 983 251 143 • 637 596 017
47010 VALLADOLID
www.analisisavanzados.com